

User Manual

Operating Room Console

Document Version History

Author	Document Title	Date	Version
Brian D Sheehan	User Manual: Operating Room Console	February 04 2010	2.0
Sridhar Reddy	ORD User Manual	July 14 2009	1.0

Document Conventions

This document uses the *Microsoft Manual of Style for Technical Publications, 3rd edition*.

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Introduction

Optimised Operating Theatre Management (OOTM)

OOTM is a unified system that provides the clinical and administrative applications needed to efficiently operate the perioperative environment. Instead of autonomous systems for operating room management, procedure scheduling, and anaesthesia information, these applications are fully integrated and use a single database server.

The result: all data collected, validated and documented by care providers and staff is available wherever and whenever it is needed. In addition, management gets the data needed to improve efficiency and make the best business decisions.

Operating Room Console

The Operating Room (OR) Console within OOTM is used to efficiently manage all procedural stages within a perioperative environment. The OR Console application launches when the Operating Room logs in to the system (i.e., using an OR-specific username) — information is then displayed on a touch-screen monitor within the operating theatre.

Examples of the kind of functionality offered by the OR Console include:

- Operation staff management
- Display of patient data and critical information such as drug allergies and medical alerts
- Safety checklists from the pre-operative stage to the post-operative stage
- Surgery progress log
- Operating room calendar
- Service requests (e.g., request blood, equipment, and medication in real-time using SMS technology)

Getting Started

Logging in to OOTM

1. Launch OOTM via an Internet Explorer web browser.
 - a. The Login to OOTM window appears.
2. Enter your login credentials:
 - a. In the **Username** box, enter your username.
 - b. In the **Password** box, enter your password
 - c. Click **Login**.
 - i. The Operating Room Console appears in a new window.

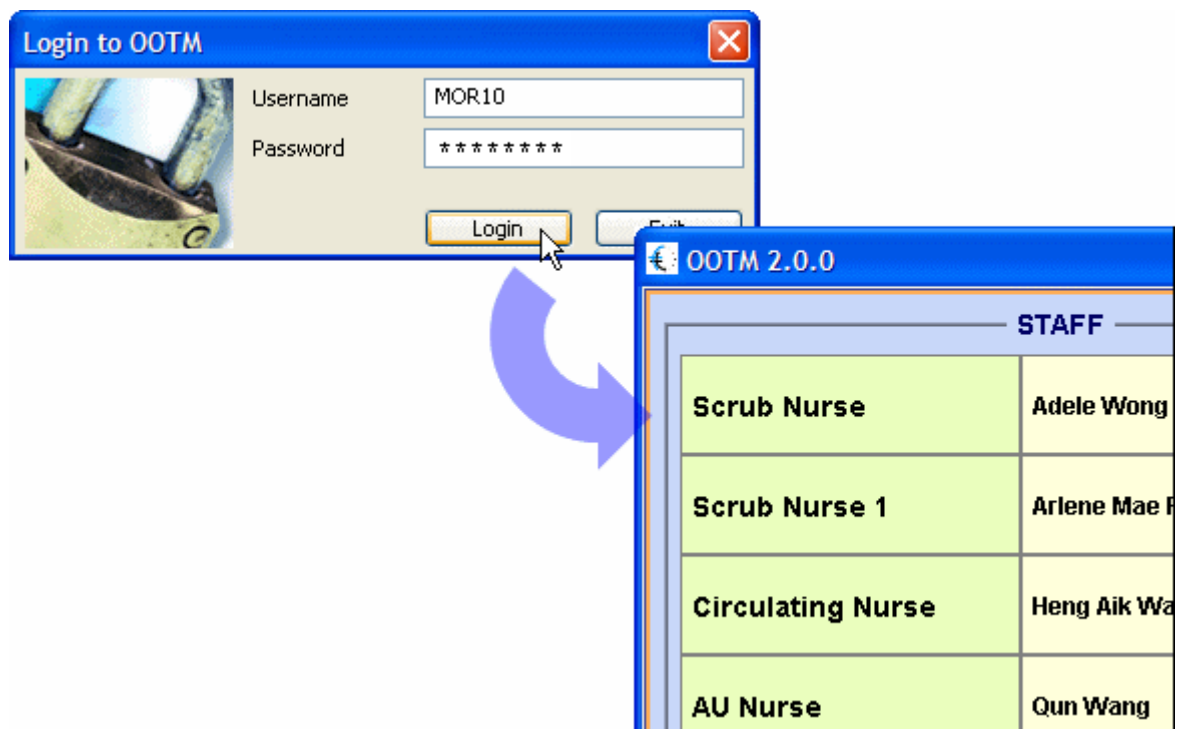


Figure 1: Logging in to OOTM

The screenshot shows the ORTM 2.0.0 software interface. Callout boxes point to the following panels:


- Staff Update Panel:** Points to the 'STAFF' table on the top left.
- Service Request Panel:** Points to the 'SERVICE REQUEST' section on the bottom left.
- Surgery Schedule:** Points to the timeline at the bottom of the interface.
- Patient Information Panel:** Points to the 'PATIENT INFORMATION' section at the top right.
- Progress Log:** Points to the 'PROGRESS LOG' section on the right side.
- Next Patient Panel:** Points to the 'NEXT PATIENT' section at the bottom right.
- Critical Information Panel:** Points to the 'CRITICAL INFORMATION' section in the center.

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Interface Elements

Name	Description
Staff Update Panel	Displays the names of the surgery participants. Functionality includes: staff selection (add/remove), staff view, and nurse switching.
Service Request Panel	Communication panel used to request services and/or items during surgery. Functionality includes: item request (equipment, x-ray, image intensifier), service request (blood, medication), and next patient request.
Patient Information Panel	Displays patient name, gender, age, weight, current anaesthetic type (if applicable), case description, and post-operation information.
Critical Information Panel	Displays critical patient information, including drug allergies, medical alerts, nature of the operation, and operation code. Functionality includes procedural checklists for all surgical stages: pre-operation, pre-induction, pre-incision, and post-operation.
Progress Log	Displays a step-by-step progress guide to all major steps of the surgical procedure. Functionality includes touch-screen confirmation of each step as it is completed and an indication of the time of completion for each step.
Next Patient Panel	Displays the patient's first name, current location, surgical information (site of surgery), and their mode of transport.
Surgery Schedule	Horizontal time-based calendar tool that displays all surgeries scheduled for the day (colour-coded).

Exiting the OR Console

1. Click the close icon .

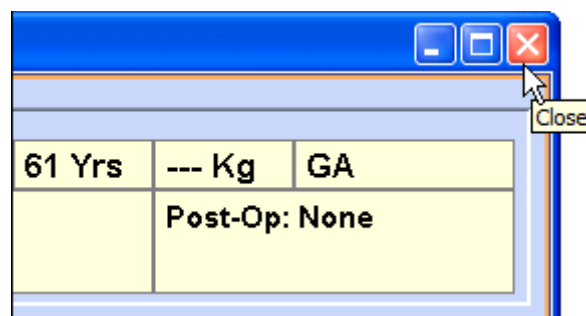


Figure 3: Exiting the OR Console

Using the Operating Room Console

Staff Update Panel

The Staff Update Panel conveys information about the staff assigned to the current surgery and is also used to modify surgical staff. The type of staff that can be represented in the Staff Update Panel, along with their role (if applicable), include:

Staff	Role
Scrub Nurse	Scrub Nurse
	Scrub Nurse 1
	Scrub Nurse 2
	Relief Scrub Nurse
Circulating Nurse	Circulating Nurse
	Circulating Nurse 1
	Circulating Nurse 2
	Relief Circulating Nurse
AU Nurse	
OT Technician	
Anaesthetist	Anaesthetist
	Primary Anaesthetist
	Secondary Anaesthetist
Surgeon	Surgeon
	Primary Surgeon
	Secondary Surgeon
	Consultant

Interface

STAFF	
Scrub Nurse	Adele Wong
Scrub Nurse 1	Arlene Mae Ferrer
Circulating Nurse	Heng Aik Wah
AU Nurse	Qun Wang
OT Technician	Ong Teh
Anaesthetist	Van Weng Koon
Primary Surgeon	Wang Ee Jen Wilson
<div> <div>Swap Scrub</div> <div>View All</div> <div>Update</div> </div>	

Figure 4: Staff Update Panel Interface

Add Staff and Role

To add staff to the Staff Update Panel:

1. Touch **Update**.
 - a. The Update Surgery Team window appears.
2. Select a Staff Title
 - a. Touch the desired staff title at the top of the screen (i.e., Scrub Nurse, Circulating Nurse, AU Nurse, OT Technician, Anaesthetist, or Surgeon).



Figure 5: Selecting a Staff Title

3. Select a Name
 - a. Drop-down List
 - i. Navigate through the drop-down list and select a name.
 - or
 - b. Search
 - i. Touch the mini-keypad to launch the keyboard utility.

- ii. Enter search letters – all names that contain the selected letters will appear in the result window as you type.
- iii. Select the desired name when it appears.



Figure 6: Searching for a Staff Member

4. Add the Staff Member
 - a. Touch the plus + button.
5. Select a Role (If Applicable)
 - a. If the staff member is a scrub nurse, circulating nurse, anaesthetist, or surgeon then a role needs to be specified. If this is the case, the Role Selection window appears.
 - b. Touch the button that represents the applicable role for the staff member.
 - c. Touch **Set**.

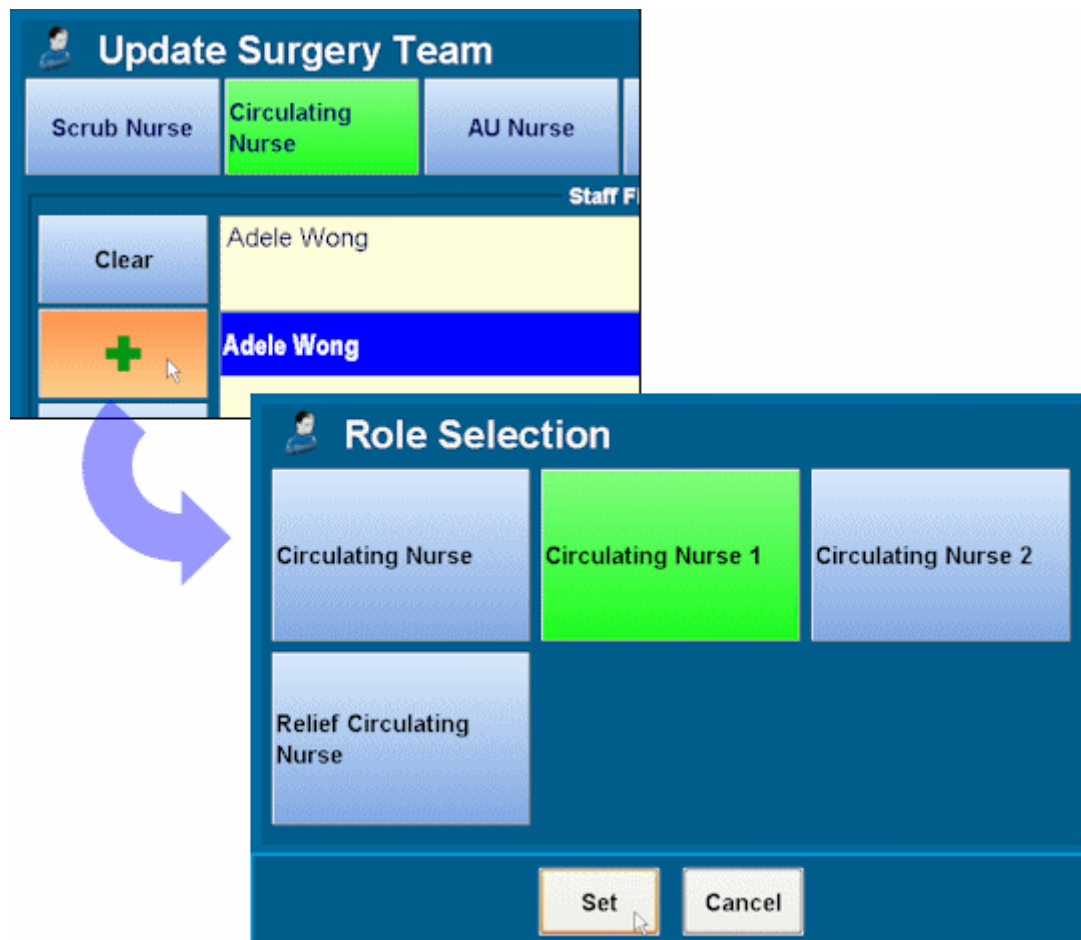


Figure 7: Selecting a Role

6. Add Remainder of Staff
 - a. Repeat steps #2 - #5 to add more staff.
7. Finalise
 - a. When done, touch **OK**.
 - b. The Staff Update Panel will list all selected roles.

Edit Staff and Role

To edit staff and/or role information:

1. In the Staff Update Panel, touch **Update**.
 - a. The Update Surgery Team window appears.
2. Select a Staff Title
 - a. Select a staff title at the top of the window.
 - i. A list of the currently active staff in the selected role appears in the Staff List panel.
3. Select a Staff Member to Edit
 - a. In the Staff List panel, touch the name of the staff member to edit – the selected box turns green.
 - b. Touch the **Edit** button (pen icon).
 - i. The Edit Staff window appears.
 - c. The active staff member's name is highlighted in the Staff Filter panel and their role is highlighted in the Staff Role panel.

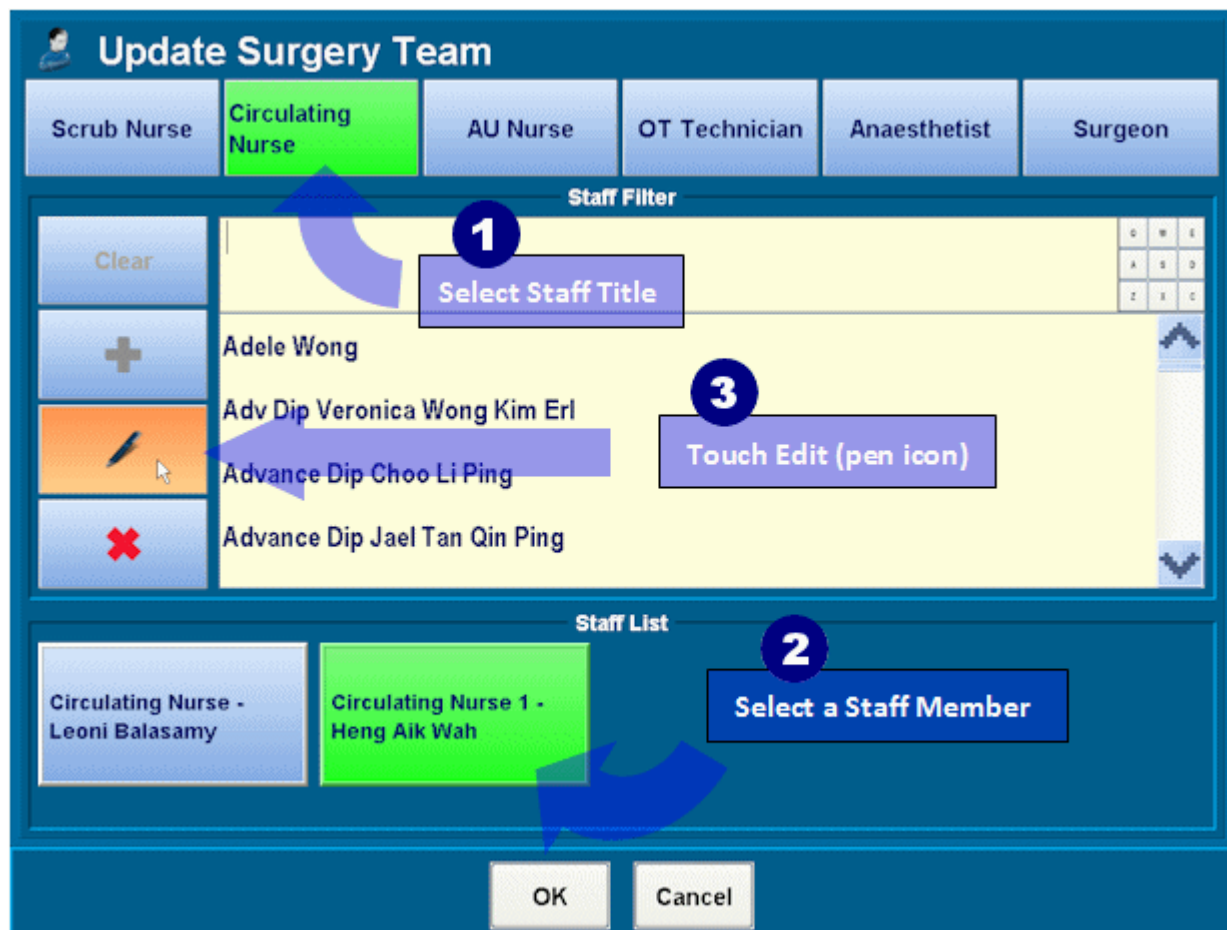


Figure 8: Editing a Staff Member

4. Change the Role

In the Edit Staff window, note that the active staff member's name is highlighted in the Staff Filter panel and their role is highlighted in the Staff Role panel.

 - a. In the Staff Role panel, touch the desired role box.
 - b. Click **Set**.

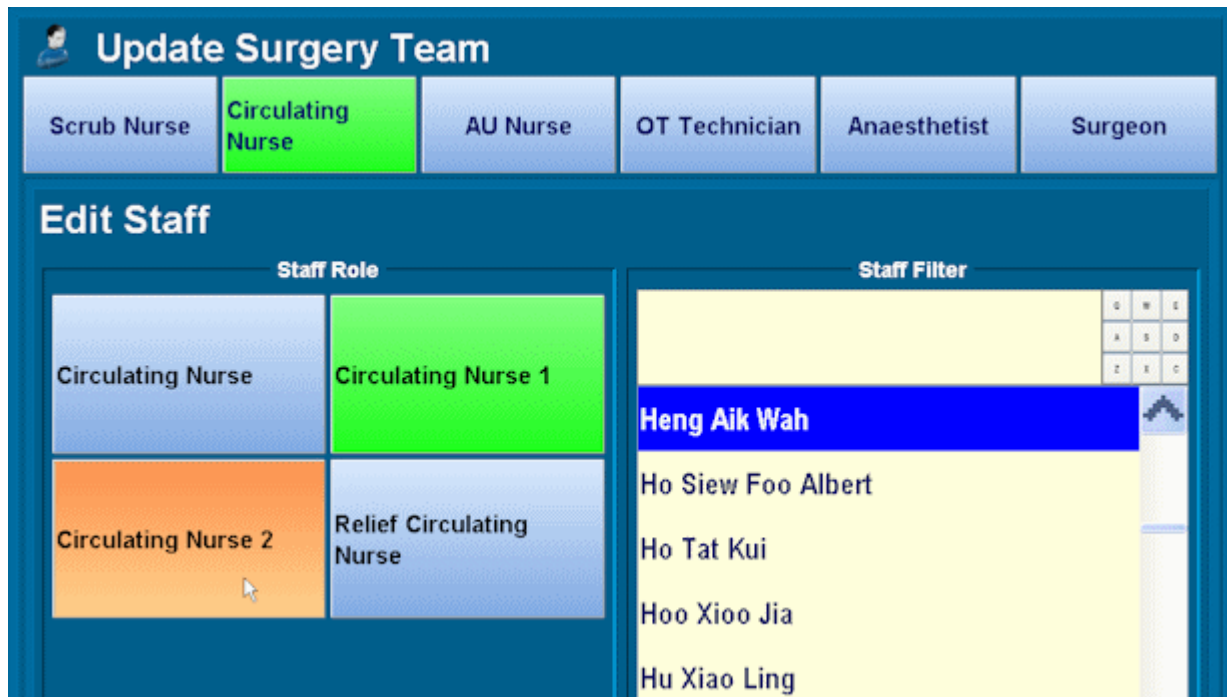


Figure 9: Changing a Staff Member's Role

5. Change the Staff
 - a. In the Staff Filter panel, navigate to the desired staff member using the drop-down list or launch the mini-keypad to search for a staff member by name.
 - b. Click **Set**.




Figure 10: Selecting Different Staff

6. Finalise

- a. Click **OK**.
- b. Information within the Staff Update Panel will change according to the modifications made.

Remove Staff

To remove a staff member:

1. In the Staff Update Panel, touch **Update**.
 - a. The Update Surgery Team window appears.
2. Select a Staff Title
 - b. Select a staff title at the top of the window.
 - i. A list of the currently active staff in the selected role appears in the Staff List panel.
3. Select a Staff Member to Remove
 - c. In the Staff List panel, touch the name of the staff member to remove – the selected box turns green.
 - d. Touch the **Remove** button .
 - i. The staff member is removed from the Staff List panel.
 - ii. Note: You cannot remove the Primary Surgeon.

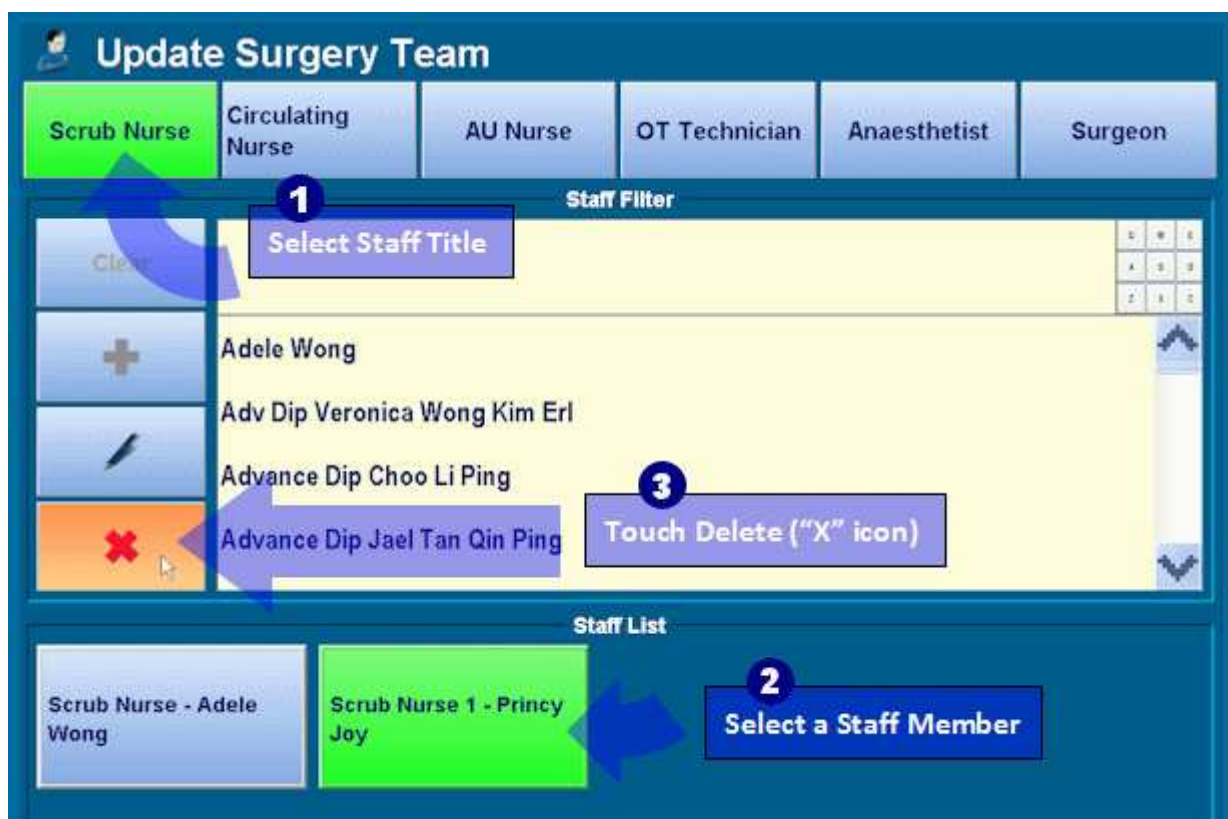


Figure 11: Removing a Staff Member

View All Staff

1. In the Staff Update Panel, touch **View All**.
 - a. The panel will expand to display a list of all assigned staff members.
2. When done, touch **OK**.

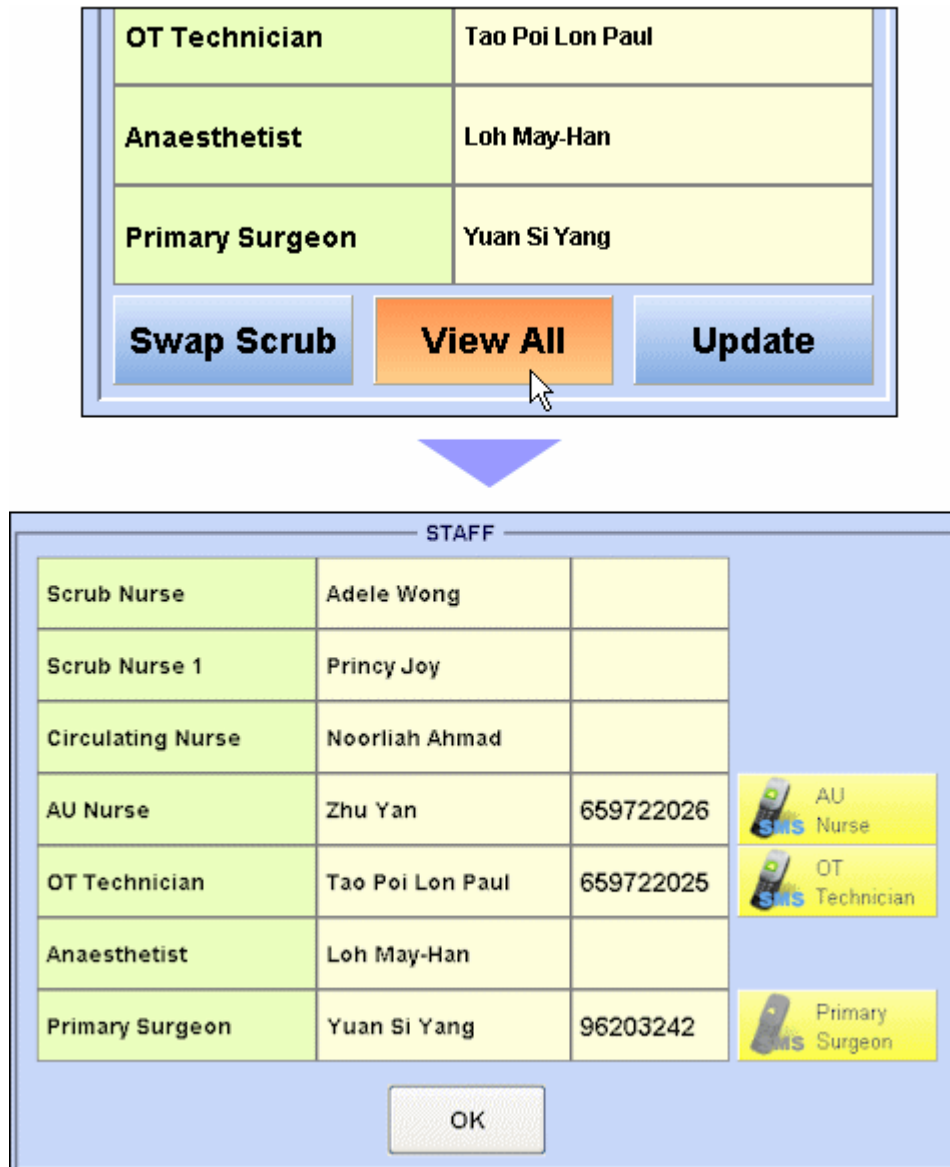


Figure 12: Viewing All Staff Members

3. Additional Functionality
 - a. If available, the handphone number of staff members will appear to the right of their name.
 - b. To contact the staff member via SMS, touch the appropriate SMS button and touch **Yes** to confirm the action.

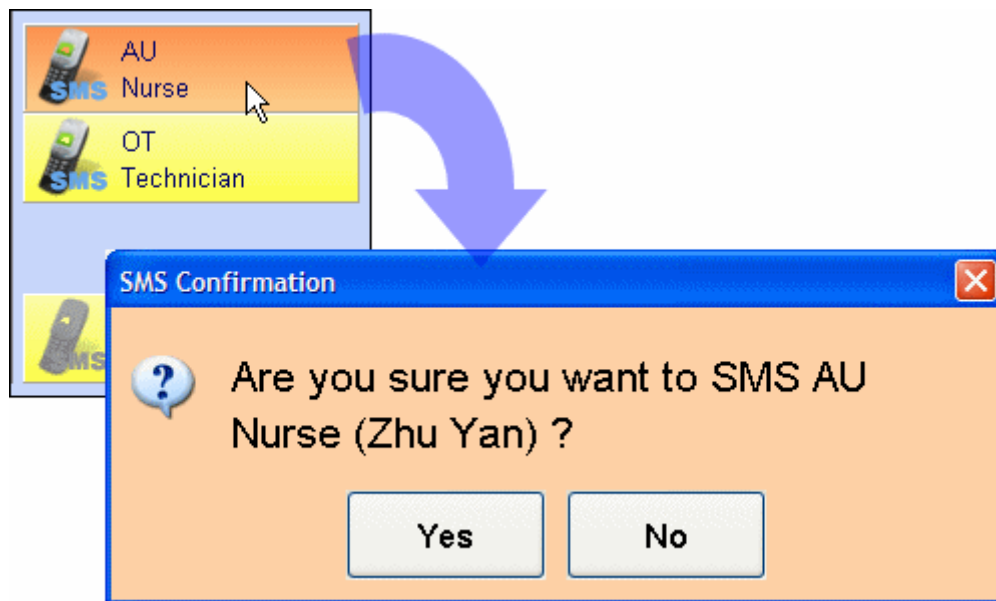


Figure 13: Sending an SMS

Swap Scrub

The Swap Scrub tool is used to switch scrub and circulating nurses.

1. Touch **Swap Scrub**.
 - a. The Swap Scrub & Circulating Nurse window appears.
2. Select the nurses to exchange – remember that the same number of nurses must be selected in each panel (i.e., if you select 1 scrub nurse, you must select 1 circulating nurse. If you select 2 scrub nurses, you must select 2 circulating nurses).
3. Click **OK**.
 - a. The Staff Update Panel will reflect the modification.

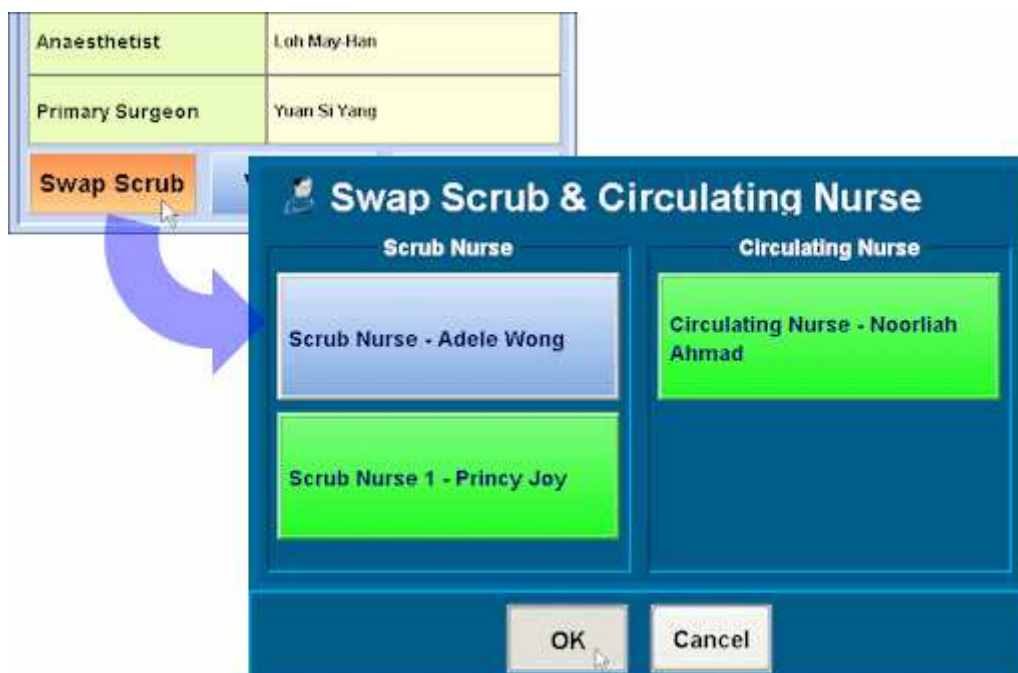


Figure 14: Swapping Nurses

Patient Information Panel

The Patient Information Panel conveys basic information about the patient as well as identifying the Operating Room number. Displayed data includes:

- Operating Room number
- Patient name
- Patient identification number
- Gender
- Age
- Weight
- Anaesthesia type
- Case Description
- Post-operation destination and bed

PATIENT INFORMATION						
MOR01	Patient	TEGUH SANTOSO (X0...	Male	61 Yrs	--- Kg	GA
	Case Description	LT TKR KIV STEM			Post-Op: None	

Figure 15: Patient Information Panel

Critical Information Panel

The Critical Information Panel displays important information about patient allergies, the nature of the planned operation, and a series of checklists based on operational procedure.

Patient Allergies

If the patient has any allergies or other medical alerts, they will appear in this section.

Drug Allergy	Medical Alert Information

Figure 16: Patient Allergies Section

Planned Procedures

The Nature of Operation section lists the type of operation to be performed while the Code section details the hospital code assigned to the operation. This data is retrieved from booking file of the patient.

Nature Of Operation	Code
Knee, Various Lesions, Total Joint Replacement	SB010K

Figure 17: Planned Procedures Section

Checklists

There are 4 checklists which should be completed before and after the surgical procedure:

Pre-Op	To be completed by the circulating nurse before calling for the next patient.
Pre-Induction	To be completed by the circulating nurse during time-out before anaesthesia induction (in the presence of the anaesthetist).
Pre-Incision	To be completed by the circulating nurse during time-out before incision (in the presence of the surgeon).
Post-Op	To be completed by the anaesthetist/circulating nurse based on the patient's need in the recovery room before the start of the patient's reversal.

Nature of Questions

All questions within each checklist are wholly configurable by an Administrator-level user. The questions are designed to promote patient safety within the perioperative environment. Examples of the checklist questions include:

Pre-Op	<ul style="list-style-type: none"> • Implants checked? • Sterility of surgical sets checked?
Pre-Induction	<ul style="list-style-type: none"> • Patient information confirmed? • Pulse oximeter on patient and functioning?
Pre-Incision	<ul style="list-style-type: none"> • Surgeon confirms any critical or unexpected steps, anticipated blood loss? • Anaesthetist confirms if there are any patient specific concerns?
Post-Op	<ul style="list-style-type: none"> • Nurse verbally confirms the name of the procedure recorded. • Nurse verbally confirms whether there are any equipment problems to be addressed.

Preparing for the OR In Phase

After the patient has entered the Operating Theatre (OT) Reception area, he/she is then prepared to enter the operating room. On entry into the reception area, a pop-up will appear on the OR Console notifying the surgery staff that the patient is ready.

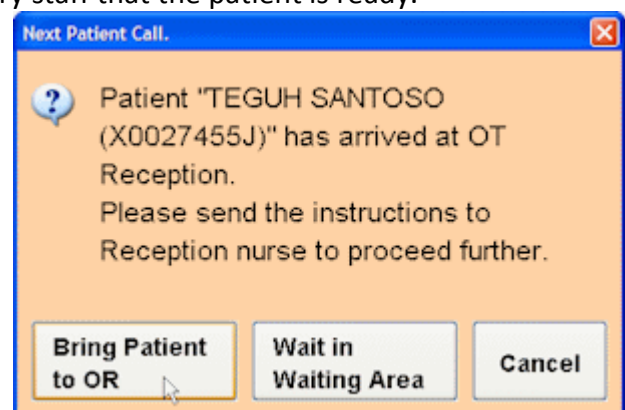
To bring the patient to the OR

1. Touch **Bring Patient to OR**.

Delay the OR In phase

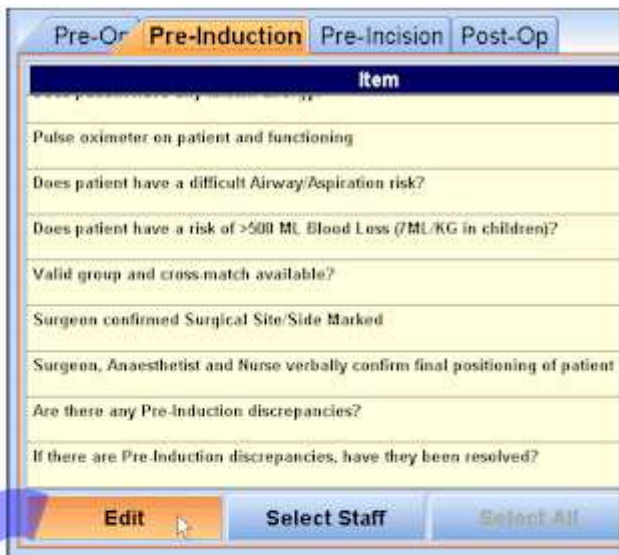
1. Touch **Wait in Waiting Area**.

When the **Bring Patient to OR** button is selected, the checklists and Progress Log features are enabled.



How to Complete a Checklist

1. Select the appropriate checklist tab.
2. Touch **Edit**.
 - a. The checklist appears in a new window.
3. Select **Yes**, **No** or **NA** for each question.



The expanded checklist window is titled "Timeout (Pre-Induction) Checklist". It contains a table with the following items and response options:

Item	Yes	No	NA
Patient information confirmed	Completed		
Is Anesthesia safety check completed? (Airway, Breathing, Suction, Drugs, Emergency Medication/Equipment)	Yes	No	
Does patient have any known allergy?	Yes	No	
Pulse oximeter on patient and functioning	Yes	No	
Does patient have a difficult Airway/Aspiration risk?	Yes	No	
Does patient have a risk of >500 ML Blood Loss (7ML/KG in children)?	Yes	No	
Valid group and cross-match available?	Yes	No	NA
Surgeon confirmed Surgical Site/Side Marked	Yes	No	NA
Surgeon, Anaesthetist and Nurse verbally confirm final positioning of patient	Yes	No	
Are there any Pre-Induction discrepancies?	Yes	No	
If there are Pre-Induction discrepancies, have they been resolved?	Yes	No	

At the bottom of the checklist window are buttons for "Cancel", "P1 e-Case", "Select All", "Staff Checklist", and "OK".

Figure 18: Completing a Checklist

4. Default Answers
 - a. Select **Select All** (from the Critical Info panel or from within the Checklist window) to set default values to checklist entries; the default value for "Yes/No" questions is "No".
5. Emergency Operations
 - a. Select **P1 e-Case** (from the Critical Information panel or from within the Checklist window) to skip the checklist. This is typically used in the event of an emergency operation with a P1 priority level.

6. Select Staff

- a. In the Critical Information panel, touch **Select Staff** to specify active staff members that will be involved in the checklist stages.
 - i. Alternatively, you can touch **Staff Checklist** in the Checklist window.

Progress Log

The Progress Log is a progress bar (from top to bottom) that displays all procedural steps involved during the surgery. The Progress Log is typically used by the circulating nurse or AU nurse so that the surgery progress can be updated in real-time.

How to Use the Progress Log

1. Complete the Pre-Op checklist.
2. Complete the Pre-Induction checklist.
3. Touch the yellow **OR In** button.
 - a. The current time will appear to the left of the **OR In** button and the button will turn green.
 - b. Note: If you touch **OR In** before completing the Pre-Op and/or Pre-Induction checklists, then you will be prompted to complete each checklist before the OR In stage is activated.



Figure 19: Pre-Induction to OR In Phase

4. Touch **Anaesthesia Induction**.
5. Complete Pre-Incision checklist.
6. Touch **Surgical Preparation**.
 - a. The current time will appear to the left of the **Surgical Preparation** button and the button will turn green.

- b. **Note:** If you touch **Surgical Preparation** before completing the Pre-Incision checklist, then you will be prompted to complete the checklist before the Surgical Preparation stage is activated.



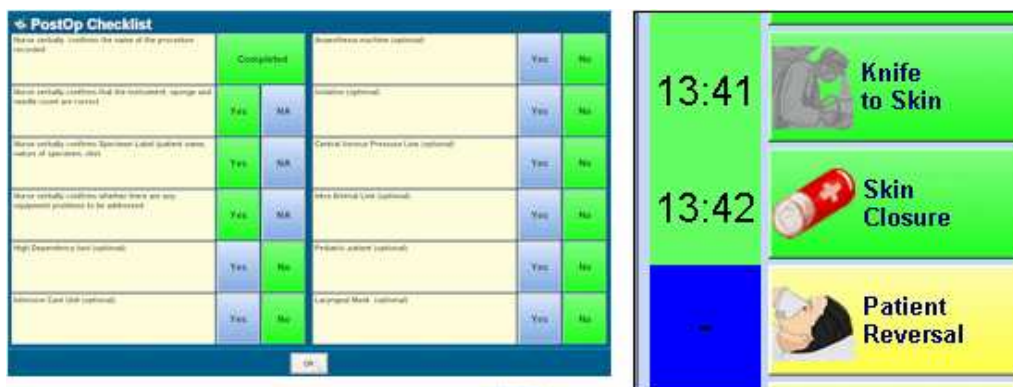
Confirm all team members have introduced themselves by name and role		Completed	Anaesthetist confirms if there are any patient specific concerns?		Yes	No	
Surgeon, Anaesthetist and Nurse verbally confirmed patient identity (Full Name, HBN)		Completed	Scrub nurse confirms the sterility of surgical sets?		Yes	No	
Surgeon, Anaesthetist and Nurse verbally confirm procedures and sterility and consent		Completed	Scrub nurse confirms if there are any equipment issues or any concerns?		Yes	No	
Surgeon confirms any critical or unexpected steps, anticipated blood loss?		Yes	No	Is there any Pre-Incision discrepancies?		Yes	No
Surgeon confirms if essential imaging has been deployed?		Yes	NA	If there are Pre-Incision discrepancies, have they been resolved?		Yes	No
Anaesthetist confirms that Antibiotic Prophylaxis been given within last 60 minutes?		Yes	NA				

Buttons: None, Pre-Incision, Surgical Set, Staff Checklist, OK

13:21	 OR In
13:38	 Anaesthesia Induction
13:38	 Surgical Preparation
-	 Knife to Skin
-	 Skin Closure

Figure 20: Pre-Incision to Surgical Preparation

7. Touch **Knife to Skin**.
 - a. The current time will appear to the left of the **Knife to Skin** button and the button will turn green.
8. Complete Post-Op checklist.
9. Touch **Skin Closure**.
 - a. The current time will appear to the left of the **Skin Closure** button and the button will turn green.
 - b. **Note:** If you touch **Skin Closure** before completing the Post-Op checklist, then you will be prompted to complete the checklist before the Skin Closure stage is activated.



Nurse verbally confirms the name of the procedure recorded		Completed	Anaesthetist machine confirmed		Yes	No	
Nurse verbally confirms that the instrument, sponge and needle count are correct		Yes	NA	Vacuum (optional)		Yes	No
Nurse verbally confirms Specimen Label (patient name, nature of specimen, etc)		Yes	NA	Central Venous Pressure Line (optional)		Yes	No
Nurse verbally confirms whether there are any equipment problems to be addressed		Yes	NA	New Blood Line (optional)		Yes	No
High Dependency (see optional)		Yes	No	Pneumotest (optional)		Yes	No
Antiseptic Line (see optional)		Yes	No	Laryngeal Mask (optional)		Yes	No

Buttons: None, Pre-Incision, Surgical Set, Staff Checklist, OK




13:41	 Knife to Skin
13:42	 Skin Closure
-	 Patient Reversal

Figure 21: Post-Op to Skin Closure Phase

10. Touch **Patient Reversal**.

- a. The current time will appear to the left of the **Patient Reversal** button and the button will turn green.

11. Touch **OR Out**.

- a. The current time will appear to the left of the **OR Out** button and the button will turn green.

12. Touch **OR Ready**.

- a. The current time will appear to the left of the **OR Ready** button and the button will turn green.

Skip OR Out

In order to facilitate patient tracking and movement throughout the perioperative environment, patients are fitted with an RFID tag. This tag automatically notifies the OOTM system of patient movement, including entrance and egress from the operating theatre.

During an operation, the surgeon may decide that the patient needs to temporarily leave the operating room. In order to do this without activating the OR Out stage (i.e., via the RFID tag when the patient leaves the OR), the circulating nurse can use the Skip OR Out feature. The Skip OR Out feature simply overrides the OR Out functionality of OOTM temporarily during the patient's absence from the operating theatre.

PROGRESS LOG	
13:21	 OR In
13:38	 Anaesthesia Induction
13:38	 Surgical Preparation
13:41	 Knife to Skin
13:42	 Skin Closure
13:46	 Patient Reversal
13:46	 OR Out
-	 OR Ready

Using Skip OR Out

1. Touch **Skip OR Out** when the patient needs to leave the OR.
2. Touch **Skip OR Out** again after the patient re-enters the OR and the surgery is ready to proceed.

Next Patient Panel

The Next Patient panel displays the following information about the next patient for surgery:

- First name
- Current location (e.g., ward)
- Site/exact operation (i.e., surgical site of operation – data retrieved from the booking)
- Mode of transport (e.g., wheelchair)

If there is no patient scheduled, then the panel will display “None”.

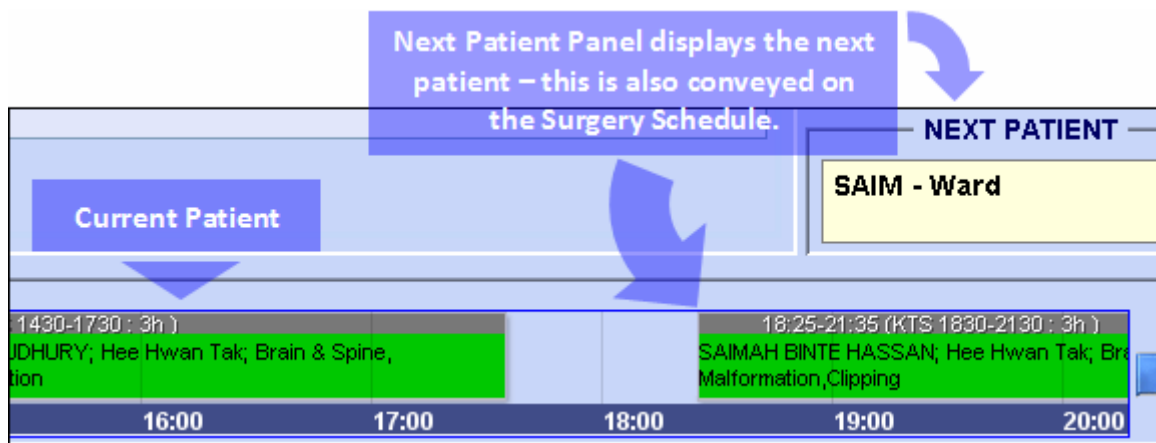


Figure 22: Next Patient Panel

Surgery Schedule

The Surgery Schedule displays all booked surgeries for the current day on a 24-hour timescale (i.e., day starts at 00:00:00 and ends at 23:59:59). All surgeries are colour-coded based on their current status:

Colour	Description
Green	Ready
Amber	Warning
Red	Critical
Blue	In Progress
Grey	Completed
Yellow	Patient in Ward

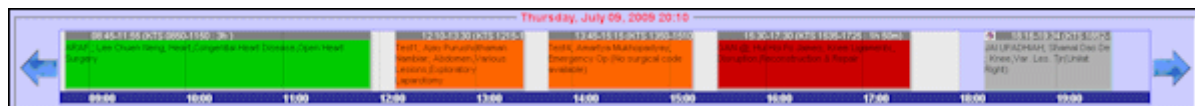


Figure 23: Surgery Schedule

Functionality

1. Navigating through the Schedule
 - a. Click on the navigation buttons to scroll the schedule forward or backward in time.



Figure 24: Schedule Scrolling

2. Change Schedule
 - a. Drag and drop a surgery to a different time schedule. The OOTM system automatically places a 20-minute time window between surgeries.